<110> Pan, James
      Goddard, Audrey
      Wood, William I.

<120> NS4 Nucleic Acids and Polypeptides and Methods of Use
      for the Treatment of Body Weight Disorders

<130> P2871R1

<141> 2001-06-12

<150> US 60/212,901
<151> 2000-06-20

<160> 9

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<211> 1161
<212> DNA
<213> Homo sapiens

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agttctacag aggaggcaca gtgggcttca ggaacaccct gcttgagagg 200

cctgtgagag gtggggaatc aatacctgac ctcgctctcc ttccatctct 250

ccccaaccca cagggggttgg tgtgggcccc acaggcgagc ctcccgggga 300

gagaagtgga gagaggacct ggagggccag tagaaggtat gcacacaagt 350

atctacaagg caccaggcat tttttqagca tttgggattt gtcagcaaac 400

aagtcagaca aaaaaccttg ctctggtgga gggaacattc tagcaaagga 450

aggcaaatga caagcaggag aagtatttgc taagaatggc aatcctgacg 500

ctcagccttc aactcatctt gttattaata ccatcaatat cccatgaggc 550

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tctccaacat gactttcagc aacggaaaac taagagtcaa aggcattttat 650

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aactctgcag gaccttcagc tatggtgtaa tttgagaatc attcactgag 750

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gacaccaaaa cctgctctcc aggaaacgag aggctgagaa gagggccagc 850

aggtgtctgt cagtacttgg agccgtgaga gcagggagtg ggtgctgggc 900

tgaggaacca gaggtaatgg ccctggggac gcccgggaag agatgagttt 950

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        tgaggcaaag ggatttgcat ttgtggatga acttgtgtgt tcagctgaag 1000

        gctgaagttg taactctgaa ccacaggaca aagcatgatg tgatgtcttc 1050

        ctcactaaat ggcaatgtcc ttgagaagac cctgtcttaa tcatctctgt 1100

        gtctcacgcc tggctcataa catatgctta tcgcatgctt ttaataaaag 1150

        gaggaaaatg c 1161
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<211> 2412
<212> DNA
<213> Homo sapiens

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        caaccgtttg gggtactctt ccacactgtg gcagctttgt tcttttgctc 100

        tttgcagtaa gttttgctgt tgcttactct ttgggtctgc actgccttta 150

        tgaactgtaa cactgaccat ggaggtctgc agcttcactc ctcaagccag 200

        caagaccagg agcccactgg gaggaggaat gaacaactct ggacacgcca 250

        cccttaagag ctgtaacact caccgcgacg gtctgcagct tcactcctga 300

        agtcagcgag accacaaacc caccagaagg aagaaaatcc ggacacatct 350

        gaacatctga gggaactccg cacacaccat ctttaagaac tgtaacactc 400

        accacgaggg cccgtggctt cattcttgaa gtcagcaaga ccagaaccc 450

        accaattctg gacacaacag gacacacaca tgggaggggg aggccagagg 500

        gaaacctagc tggcttgggg tgggaatttg aatccctgag cccatcttct 550

        tctttcacca ctttgtccgg tgacattagg accaaccaac caatgccatt 600

        atatttctta gtttacaaga aaatgtttga agttctcatc cacagaatca 650

        cttagcttct tgcttttac aagtggttga ttaggagtat tcaatacaga 700

        ttttgtgtat cactataaac agttcacagc atggactact ggtgttctct 750

        ttactaactg aaatggtgtc attagcacct ttaaatctaa tccatttaga 800

        gagccagttc cggaaacctc agaaccagtt tggaaaactt ccgttcttct 850

        gaagccattt ttggaaccac atctgtgcta ggttctccag ggaaacagaa 900

        ccaatatgtt ttatttacta tggggactgg ctcatatgat tctgaggcc 950

        tagaagtccc tccctctcaa gatgtgctgt cagcaagctg cagaaccagg 1000

        aaagctggtg gtgtcagagt ctgaaggcct gagaactggg tggggagtgg 1050

        gacagactaa ggggcctta gtctctgggt tggtgtggtc cccacaggtg 1100
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agcctttcgt ggagaagggt ggagagggga tctggaaggg ccaatagaag 1150

atactcagca ctaagagacc tttggactca gaccagaact tacaccattc 1200

attcattcag tcggtgaaaa tgtattgacc actgtatcaa ccaggattgt 1250

gacacaaaaa cagatggcac actcaaaaga ggataattca agaagggctt 1300

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agtgtcctac cctccagcag gcagcagcta attcctgagg ggataaggac 1400

gtggttgcga ggacatggag ggaaagttct acagaggagg cacagtgggc 1450

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gccctgtggg ctggaaagct gaccacagtt gctgcagacc agacccctc 1650

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ataaaacgag tctttcttct tggaaacatg accaagattg ggcaaacgtc 1900

tccaacatga ctttcagcaa cggaaaacta agagtcaaag gcatttatta 1950

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agcagagtcc taatttatat tttagaagaa tcatcatggc tcctagatta 2150

ggaataaaac gaaggggccc agggatggaa acgatgagtc cagttgggtt 2200

actgcaaaga tccaggccag aaatccaggc acagtggcac acacctgagt 2250

cccagataat tccacctact ggtcctgctc tgtggcctac tggtccgagt 2300

ccagccccga ctgatttctg ggcctgtaat gtctaaaaac gctccctgct 2350

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agtcgcttta tc 2412
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<210> 3
<211> 1186
<212> DNA
<213> Homo sapiens

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gctggtcccc tagaaatgtt actgaggcag cctctgcatt tttgcaggga  150

ttgttttcta ctgtttgaca ttcacgtaac ctcctaacgc tgtctgggga  200

agatgctacc ccctgctctc cccgtctttc ctgcactctc agcaatggga  250

tgggctgact gatgccctgt gggctggaaa gctgaccaca gttgctgcag  300

accagacccc ctcacatagt gagtgctggg ctgaggaatc caggagagcc  350

cgaggggga cactgaaggt gtatcgttgg ccctgccagc tgcaagtgaa  400

ctgcttctga tgaattttaa tagggagaaa gaagtatttg ctaagaatgg  450

caatcctgac gctcagcctt caactcatct tgttattaat accatcaata  500

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ttgggcaaac gtctccaaca tgactttcag caacgggaaa ctaagagtca  600

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tcagcaggcc taactctgca ggaccttcag ctatggtgta atttgaggtc  700

agtggccaga ggacagatcc cgtctacatt atgagtgaag cggagagcta  750

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gtccagttgg gttactgcaa agatccaggc cagaaatcca ggcacagtgg  900

cacacacctg agtcccagat aattccacct actggtcctg ctctgtggcc  950

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cctaggataa actagtcgct ttatcattac agaatcattc actgagcatc 1100

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<211> 87
<212> PRT
<213> Homo sapiens

<400> 4
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Pro Ser Ile Ser His Glu Ala His Lys Thr Ser Leu Ser Ser Trp
                20                  25                  30

Lys His Asp Gln Asp Trp Ala Asn Val Ser Asn Met Thr Phe Ser
                35                  40                  45
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4

```
    Asn Gly Lys Leu Arg Val Lys Gly Ile Tyr Tyr Arg Asn Ala Asp
                    50                  55                  60

    Ile Cys Ser Arg His Arg Val Thr Ser Ala Gly Leu Thr Leu Gln
                    65                  70                  75

    Asp Leu Gln Leu Trp Cys Asn Leu Arg Ile Ile His
                    80                  85
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<210> 5
<211> 94
<212> PRT
<213> Homo sapiens

<400> 5

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      1               5                  10                  15

    Pro Ser Ile Ser His Glu Ala His Lys Thr Ser Leu Ser Ser Trp
                    20                  25                  30

    Lys His Asp Gln Asp Trp Ala Asn Val Ser Asn Met Thr Phe Ser
                    35                  40                  45

    Asn Gly Lys Leu Arg Val Lys Gly Ile Tyr Tyr Arg Asn Ala Asp
                    50                  55                  60

    Ile Cys Ser Arg His Arg Val Thr Ser Ala Gly Leu Thr Leu Gln
                    65                  70                  75

    Asp Leu Gln Leu Trp Cys Asn Leu Arg Ser Val Ala Arg Gly Gln
                    80                  85                  90

    Ile Pro Ser Thr
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<210> 6
<211> 95
<212> PRT
<213> Homo sapiens

<400> 6

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    Met Ala Ile Leu Thr Leu Ser Leu Gln Leu Ile Leu Leu Leu Ile
      1               5                  10                  15

    Pro Ser Ile Ser His Glu Ala His Lys Thr Ser Leu Ser Ser Trp
                    20                  25                  30

    Lys His Asp Gln Asp Trp Ala Asn Val Ser Asn Met Thr Phe Ser
                    35                  40                  45

    Asn Gly Lys Leu Arg Val Lys Gly Ile Tyr Tyr Arg Asn Ala Asp
                    50                  55                  60

    Ile Cys Ser Arg His Arg Val Thr Ser Ala Gly Leu Thr Leu Gln
                    65                  70                  75

    Asp Leu Gln Leu Trp Cys Asn Leu Arg Ser Val Ala Arg Gly Gln
                    80                  85                  90
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<211> 27
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<213> Artificial Sequence

<220>
<223> Cloning oligonucleotide

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<210> 8
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Cloning oligonucleotide

<400> 8
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<210> 9
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Cloning oligonucleotide

<400> 9
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  tttgctctcg a 61